

## E.2.4 PANTEX PLANT

This section describes the baseline conditions and specific waste management operations at Pantex. As part of its normal operations, Pantex generates low-level, mixed low-level, hazardous, and nonhazardous wastes. Tables E.2.4–1 and E.2.4–2 present a detailed description of treatment and storage facilities with estimated capacities.

Pantex's goals regarding the management of LLW, mixed LLW, and hazardous wastes are as follows:

- Minimize the volumes of low-level radioactive, mixed low-level, and hazardous wastes generated to the extent technologically and economically practicable
- Recycle those wastes applicable to the best available technology
- Minimize contamination of existing or proposed real property and facilities
- Ensure safe and efficient long-term management of all wastes

**Pollution Prevention.** Pantex has a waste minimization program that was created to define an effective waste minimization system for the site. A committee provides awareness of the program, identifies tasks, and provides liaison between the site and outside entities. Some of the accomplishments of this program are as follows:

- Compactor used to compact 1,200 drums to approximately 250 drums. Disposal cost savings of approximately \$300,000 was achieved.
- Separation of radioactive and hazardous waste materials when shearing weapons components. Reclamation of gold from this process netted \$243,000 in the first year.
- Reclamation of oil, antifreeze, and refrigerant.
- Substitution of scintillation solution that is nonhazardous.
- Reuse of explosives and solvents.
- Repackaging of paint into smaller containers.
- Substitution of naphtha with nonhazardous biodegradable cleaning solution.

**Transuranic Waste.** No TRU waste or mixed TRU waste is currently generated at Pantex during normal operation. However, there is a potential for an off-normal event to generate small amounts of contact-handled TRU waste or mixed TRU waste during a weapon-dismantlement activity. Three drums of TRU waste were generated several years ago from an incident during weapon dismantlement. Ultimately, Pantex plans to ship its TRU waste to a DOE-approved storage site when available. In the interim, approximately 1 m<sup>3</sup> (1.3 yd<sup>3</sup>) of TRU waste is temporarily stored in Building 12-42 (DOE 1995gg).

**Low-Level Waste.** The following options are available for the management of LLW streams:

- Continue to ship to an approved DOE disposal site such as NTS
- Compact solid waste, if possible

- Continue improvements to computerized tracking of radioactive waste
- Implement improved segregation program

Solid LLW generated at Pantex consists of contaminated parts from weapons assembly and disassembly functions and waste materials associated with these functions, such as protective clothing, cleaning materials, filters, and other similar materials. The compactible components of this waste are processed at the Pantex Solid Waste Compaction Facility and staged along with the noncompactible components for shipment to a DOE-approved disposal site. Table E.2.4-3 lists Pantex's LLW streams, how they are generated, primary radioactive constituents, and method of storage or disposal. Table E.2.4-4 presents the inventory of LLW at Pantex as of December 2, 1994, as well as a 5-year projection.

**Mixed Low-Level Waste.** The following options are available for the management of mixed LLW streams:

- Store onsite pending treatment to satisfy LDR requirements. This is the current option now being used at Pantex (PX DOE 1996b:4-193).
- Treat to satisfy LDR requirements and ship to an approved commercial facility or other DOE-approved facility for storage or disposal.
- Ship off site for treatment and disposal.

Pantex manages its mixed waste in accordance with the *Pantex Plant Federal Facility Compliance Act Compliance Plan*. Pantex generates solid mixed LLW during weapons component testing functions. These wastes consist primarily of depleted uranium and beryllium residue and fragments from explosive components tests, contaminated soils, cleaning materials, and protective clothing associated with these operations. Other mixed LLW streams include cleaning materials from weapons assembly and disassembly operations. Mixed LLW (high explosives [HE] contaminants only) is currently treated at the Burning Ground, which has a permitted capacity of 180 m<sup>3</sup>/yr (236 yd<sup>3</sup>/yr) (DOE 1995gg). The Hazardous Waste Treatment and Processing Facility is being planned to treat mixed waste in mobile treatment units. Table E.2.4-5 lists Pantex's primary mixed waste streams, composition, method of process, and treatment alternatives. Table E.2.4-6 lists organic liquid mixed LLW stream candidates that are being evaluated for commercial treatment and/or disposal. Table E.2.4-7 lists the mixed waste storage inventory as of September 1995, as well as a 5-year projection.

**Hazardous Waste.** The following options are available for the management of hazardous waste streams:

- Continue to ship to approved hazardous waste disposal facilities
- Encapsulate solid waste and ship to a DOE-approved disposal site
- Treat onsite for neutralization of corrosive wastes

Table E.2.4-8 presents the inventory for hazardous waste at Pantex as of December 2, 1994, as well as a 5-year projection. The treatment of hazardous waste is done at the following facilities:

- The Burning Ground is an open-burning area where explosives, explosive-contaminated waste, and explosive-contaminated spent solvents are burned. A large volume reduction is attained by this treatment, and some wastes are rendered nonhazardous due to elimination of the HE reactivity hazard.

- The Hazardous Waste Treatment and Processing Facility will house liquid-phase and solid-phase hazardous, low-level, and mixed waste processing activities. The facility has been planned and approved and should be available in 2000.

Not all of the hazardous waste is treated at Pantex. The amount of hazardous waste shipped offsite in 1994 is shown in Table E.2.4–9. There are several separate storage facilities for hazardous wastes.

- In the Hazardous Waste Drum Storage Area, all liquid drums are placed in spill-containment pans. The facility is inspected weekly for leakers. Small lab samples of hazardous waste are stored in two chemical storage containers in this area. The materials stored in the area include asbestos, mercury-contaminated wastes, Burning Ground ash, and electroplating sludge.
- At Building 16-1, used crank case oil is stored underground until sufficient quantities are generated for offsite processing.

Class 1 non-RCRA-hazardous waste includes asbestos-contaminated materials, PCBs with a concentration greater than 50 parts per million (ppm), and oils with a total petroleum hydrocarbon concentration greater than 1,500 ppm. Table E.2.4–10 presents the Class 1 non-RCRA hazardous waste streams, current inventories as of December 2, 1994, and projected generation volumes.

Medical waste is defined as any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals; in research; or in the production or testing of biologicals. This waste includes cultures and stocks, pathological wastes, human blood and blood products, sharps, animal waste, and isolation wastes. Pantex currently generates approximately two boxes per week, each with a capacity of 0.142 m<sup>3</sup> (0.186 yd<sup>3</sup>). The annual generation rate of medical waste at Pantex is approximately 15 m<sup>3</sup> (19 yd<sup>3</sup>) (PX DOE 1995i:14–15). Medical waste is dispositioned through a commercial vendor who picks up and transports the medical facility's biomedical and infectious waste.

**Nonhazardous Waste.** The Sewage Treatment Quality Upgrade is a 1996 project at Pantex. This project would upgrade the Pantex sanitary system to ensure that wastewater standards are met through secondary/tertiary treatment. Included in this project is the upgrade of the existing sewage treatment lagoon, repair and replacement of existing deteriorated sewer lines, construction of a closed system to eliminate the use of open ditches for conveyance of industrial wastewater discharges, and implementation of a plant stormwater management system.

Class 2 nonhazardous waste (general refuse) is collected at each building from trash cans and placed in dumpsters. This includes cardboard, computer paper, white paper, colored paper, mixed steel, steel and aluminum cans, mixed metal, mixed plastic, foam rubber, and glass. Currently, telephone directories, paper, certain plastics, and some steel and aluminum cans are being recycled. The weights of Class 2 nonhazardous waste disposed from 1989 to 1994, and the estimated amounts for 1995 through 1999, are given in Table E.2.4–11.